



The Swedish House of Finance (SHoF) offers within its Doctoral Course Program a lecture series on

Equilibrium Theory in Continuous Time Finance

with

Tomas Björk (SSE)

Course Content:

1. The connection between dynamic programming and the martingale method for optimal investments.
2. Equilibrium in a simple production economy.
3. The Cox-Ingersoll-Ross production equilibrium model, including the CIR interest rate model.
4. Existence of the representative agent for multi-agent models.
5. Endowment equilibrium models.
6. Time permitting, we will also cover some filtering theory and models with partial observations.

Prerequisite:

Necessary and sufficient prerequisites are Tomas Björk's PhD course "Continuous Time Finance". In operational terms this means knowledge of the following basic tools: Arbitrage theory, martingale measures and the relations to absence of arbitrage and market completeness, risk neutral valuation, stochastic analysis for Wiener driven processes, Girsanov transformations, change of numeraire, dynamic programming for stochastic control problems, and the martingale approach to optimal investment problems. The necessary background is included as Chapters 1-2 (stochastic control) and Appendix A (arbitrage theory) in the lecture notes (see "Literature" below).

Course Format:

The series will start on January 14 with 4 hours of lectures every Tuesday until February 18. (Exact dates and times are given below.) There will be a take-home exam at the end of the course and the course will count as 5 ECTS points. For further information about the course content, please contact Tomas.Bjork@hhs.se

Literature: The literature consists of a set of lecture notes (ca 175 pages) and OH slides for the lectures, which will be available on the course home page. They can also be found [here](#). There will also be requested readings of some classical papers in the field.

Schedule

The course will take place at SHoF, Drottningatan 98

- Tuesday January 14 2014, 10.00-12.00 and 13.00-15.00
- Tuesday January 21 2014, 10.00-12.00 and 13.00-15.00
- Tuesday January 28 2014, 10.00-12.00 and 13.00-15.00
- Tuesday February 4 2014, 10.00-12.00 and 13.00-15.00
- Tuesday February 11 2014, 10.00-12.00 and 13.00-15.00
- Tuesday February 18 2014, 10.00-12.00 and 13.00-15.00

Registration

Please register in advance with the course secretary Jenny Wahlberg Andersson, Department of Finance, Stockholm School of Economics, Drottninggatan 98, 111 60 Stockholm, Phone: 736 9140, e-mail: jenny.wahlberg.andersson@hhs.se

Travel Stipends

SHoF offers travel stipends to PhD students from Swedish universities. To apply, please send a brief motivation letter/mail by the supervisor and a budget to jenny.wahlberg.andersson@hhs.se.

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On <http://houseoffinance.se/phd-course-program/core-courses/> there is further information about SHoF's Doctoral Course Program in Finance.